

NOTES ON A PREHISTORIC RACE OF YUCATAN.

BY R. W. SHUFELDT, M.D.

During the month of June, 1912, I received, through Mr. E. W. Nelson, of the Biological Survey of Washington, D.C., from my son, Mr. P. W. Shufeldt, who for several years has been a resident of Campeche, Yucatan, a consignment of some human remains, which he had collected in that country. Mr. Nelson had received these with other biological material which my son had sent him, and I have pleasure in thanking him here for his courtesy in transmitting them.

About a month after this material came into my hands, my son wrote me an interesting letter, in which he requested me to make such use of all he had sent as I thought best, and, further, he gave a brief account of the region in which he had collected the aforesaid material, and other notes.

This material I found to be the broken and fragmentary remains of a human skeleton or skeletons, all of which I shall fully describe further on in this contribution.

From my son's letter I transcribe the following information, which I give in his own words: "As you perhaps know, the peninsula of Yucatan—or at least such part of it as is familiar to me—is evidently formed of upheaved sea-bottom, and that within comparatively recent times. It is now covered with a thin cap of decomposed vegetable mould, and more or less heavily forested in the less civilized portions. At the time of this upheaval, there were formed a series of low, rolling hills, with more or less level swales in between. The part of which I write is almost destitute of running streams or rivers, and all the available fresh water is that which is collected during the rainy season in the lower depressions in the swales, which are known as 'aguadas.'

"The land which is being worked by the company with which I am connected comprises something over a million and a half acres, situated in the southern half of the District of Champoton. With this land I am more or less familiar, and it was here that the human remains were collected. At the present time, there are a few isolated

villages of native Indians belonging to the Maya race, who have inhabited this section as far back as the memory of man. As far as I have been able to find out, they have absolutely no folk-lore or traditions relative to the vast population which preceded them. They are a dying race, with little moral or physical stamina left, and, beyond a very ordinary basket-weaving, no native industry.

“Now as to the prehistoric race—or races—which at one time covered this vast country, you would hardly believe the amount of ruins that remain; it would be entirely within the truth to say that *all* the high land has been occupied by dwelling houses, and beyond a doubt the population at one time fully equalled the most congested parts of India. As far as I have seen, there were no important cities; rather the entire country was one swarming mass of people. Often, about the larger aguadas, may be found such heaps of ruins as would lead one to believe that temples or principal buildings were situated there. I have personally seen but one building standing; but that is enough to give an idea of the very substantial nature of the buildings—or at least of some of them.

“Without exception, they were of stone faced with squared limestone placed in mortar—the walls being of extreme thickness and formed of rubble—the dressed stones facing on the outside, the rooms on the inside being plastered, and, evidently, in many cases, this plastering was decorative and painted.

“In the case of the house still standing, the flat Maya arch is used, and there are both doors and windows. The building was of at least two stories, and perhaps three. Besides these stone structures—the remains of which, as I say, are without number—there are many evidences of even more numerous houses of a more perishable nature where permanent structure was only used in the foundations and flooring.

“Almost without exception, in the six or eight structures which I have had dug up, remains of human bones were found; but all these are very much decomposed and extremely brittle.

“Other objects which have been found in these old ruins or ‘cuyos,’ as they are called, and of which I have collected specimens, are earthen pots, both for cooking and ornament. These are of numerous grades—some as fine as modern Guadalajara pottery, others of much coarser grade. As to decorations, there are examples of glaze in red, yellow, or a very dark brown, both painted decorations and embossed on the clay. There are also remains of very large jars which were of a coarse grade. Among other clay objects

found are representations of various animals, birds, and figures of idols. The last are all more or less of the same character, and of very inferior grade of pottery—hollow, showing head decorations and ear-rings, or rather buttons, necklaces, etc. The upper teeth are always showing, sometimes in an exaggerated form, but seldom any lower teeth. These clay idols occur in almost endless forms, but all with the foregoing characters.

“Among the stone implements I have found human heads or idols; axes of several kinds of stone; arrow- and spear-heads of very superior workmanship; grinding stones for corn or ‘metates’—of hard stone as well as of the stone used at the present time. Without exception, however, these metates are very small, with short legs.

“I have also a number of smaller stone implements, of which one can only guess the uses. Besides the aforementioned specimens, I have one bone implement, such as might be used for husking corn. Up to the present time there has not been a single metal implement or ornament found here.

“It will give you some idea as to the age of this civilization, when I tell you that nearly all the available ground for building, in such areas as I have been able to study—that is, where we have cleared away the forests—has, without doubt, been worked over by hand, as evidenced by buildings, or rather the remains of them: little piles of stones and trash, evidently gathered ready for building, as well as broken stones without number. All, or most, have evidently been tested as to their suitability for stone implements.

“In many places, without evident remains on the surface, there is, upon excavation, as much as a meter of soil containing broken pottery, pieces of broken stone implements, etc., and often, also, remains of human skeletons.

“From my limited observation and knowledge of such subjects, I came to the following conclusions in regard to these prehistoric people, whoever they were:—that the density of population was equal—or beyond—anything existing to-day upon the face of the earth, outside of the large, modern cities; that they were well advanced in the art of building; that they were unfamiliar with the use of metals (?); that there has been not only one highly developed people, but two or three, each building upon the ruins of the former; that they had highly developed the art of clay-burning and glazing; that they had outside communication with a people inhabiting the highlands of Guatemala or Mexico or some other people living in the volcanic mountain country, and that, at least, they cultivated cotton

and corn. How or where they secured their supply of water, who they were, or where they went—each may form his own idea.”

When I came to examine the material referred to at the commencement of this article, I found that it represented one human skeleton and a few parts of a second one, such as an extra mastoid process of a temporal bone of the right side of a skull. There may be other pieces belonging to this latter skeleton, but of that I am not quite sure, as the fragmentary condition of the whole renders it practically impossible to decide as to that. The extra mastoid process is larger than the other two at hand, and apparently came from the skull of a larger individual than the rest would indicate. It is probably from the skull of an adult male subject.

There are some 150 pieces or more of the skeleton to which the balance of the material belongs. Apart from some of the phalanges of the hands and feet and other small bones, these are all more or less imperfect—in most cases extremely so.

As bones, they all exhibit the usual evidences of great age and, in some instances, of having been broken up long ago—as in the case of certain bits of the calvarium, where the fractured edges are considerably worn, thus rendering it impossible to associate them correctly. All of these pieces are of a very pale clay color, almost white, and extremely friable and brittle. Even the shafts of the largest long bones may easily be broken with one's hands alone.

The only restorations that it was possible for me to make are here shown in Plate XIX and in Plate XXI, fig. 17. The skull and mandible are shattered into many little bits, and such bones as the sphenoid and others are broken up to such an extent as to make it difficult to recognize the parts—even with a perfect skull at hand for guidance. Except a very few fragments, the entire vertebral column and pelvis are missing, and I find no pieces that would suggest any portion of the hyoid bone. One clavicle is in fairly good condition (Plate XX, fig. 8), but most of the ribs are very fragmentary. No part of the sternum seems to be present, and if it is, the parts have been crumbled beyond recognition. This appears to be likewise true of the scapulæ.

With respect to the long bones of the extremities (Plate XXI, figs. 17–22), I find the middle thirds of the shafts of the femora, with their extremities and the rest, missing. There are also similar remains of the humeri, the ulnæ, the radii, tibiæ, fibulæ, and so on; but no other bone nearly as perfect as the humerus I restored in Plate XXI, fig. 17. The crests of the tibiæ are far from being what

we would call sharp. Some of the shafts of these long bones, especially the radii and tibiæ, exhibit a pathological condition, through which necrosis has followed and destroyed some of the osseous tissue of the shafts. It is quite possible that this was due to syphilitic disease or to some other malady, but I believe it to be due to syphilis.

Judging from the slenderness and general form of these bones, I would say that they belonged to a skeleton of a female subject; and, owing to the fact that the clavicle exhibits no distortion or augmentation of size, to an individual who was not accustomed to severe labor of any kind worth mentioning. Further, this person must have been between twenty-five and thirty years of age, which I assume to be the case from my examination of the seven (7) teeth I find with the remains (Plate XX, figs. 3 and 4, *a, b, c, d* and *e*). There is also a small first bicuspid with half of its fang broken off, which is not figured. All of these teeth are wonderfully sound and perfect, exhibiting no evidences of caries whatever or attrition due to the wear of age.

Only a few of the bones of the carpus, or tarsus, are present; these are more or less imperfect and present nothing of special interest.

In Plate XX, figs. 9-16, I give some of the phalanges of the hands and feet. These are selected from quite a number which my son collected with the rest of this skeleton, and from their general form and appearance seem to have belonged to an individual who, in so far as the feet are concerned, never compressed these parts in any way whatever and yet walked a great deal. The individual bones are stout, strong, and somewhat broad, transversely for their lengths (Plate XX, fig. 10).

If we may judge from what we have of the skull of this subject (Plate XIX, fig. 1, and Plate XX, fig. 3), it is fair to assume that the possessor of it had a rather large cranial capacity; that the parietal, supraoccipital and temporal walls were not particularly thick; while, as a matter of fact, the tables are thin and the diploic tissue not especially abundant. In the lambdoid suture there is at least one "Wormian bone" present, and there may have been others, although I attach no great significance to the fact. The "anterior nasal spine" was rather prominent, as is the case in some of the lower races of mankind.

On the internal table of the cranial vault, the eminences and depressions for the lodgement of the convolutions of the cerebrum

are well marked, but not sufficiently well preserved to indicate the amount or complexity of the cerebral substance. The lateral sinuses, the grooves for the meningeal arteries, and the Torcular Herophili are all easily made out, and there is every indication that the foramen magnum was unusually large.

Although fragmentary, this material is of no little importance, especially when taken in connection with what my son has pointed out in his above-quoted letter. It is to be hoped that a great deal more material will come to hand from the same country, including such objects as pottery, weapons, tools, ornaments, idols, etc., as well as a series of good photographs of remains of buildings, character of country and other data so as to furnish as complete a report as possible on this prehistoric people and the little-known country they inhabited.

EXPLANATION OF PLATES XIX, XX, XXI.

[All the figures in the three plates are reproductions of photographs made by the author direct from the specimens.]

PLATE XIX.—Fig. 1.—Portion of the left side of the skull, broken into five (5) pieces, and restored by the author. *tm.*, temporal bone; *zyg.*, zygomatic process of temporal; *ms.*, mastoid process; *c.*, condyle for atlas; *p.c.f.*, posterior condyloid foramen; *oc.*, occipital bone, broken into four (4) parts; *s.s.*, squamosal suture; *l.s.*, lambdoid suture. The longest diameter of the portion of this skull here shown, taken from the end of the zygomatic process to the occiput, measures in the specimen 16.2 cms.; the same diameter measures on the figure 14.3 cms. The ratio gives the amount of reduction.

PLATE XX.—Fig. 2.—One of the cervical vertebræ seen from above. The spinous process broken off, together with lower border of lamina. This is probably the fourth to the sixth cervical vertebra, from the skeleton of not a large subject. Sex unknown. I have not compared it with the vertebræ of this part of the spine in the skeletons of known subjects. Transverse diameter of body in specimen 1.9 cms.; in this figure on the plate, 1.6 cms. This will give the ratio of reduction for all the other bones shown on this plate.

Fig. 3.—Fragment of superior maxillary bone seen on direct lateral aspect; first and second molar teeth *in situ*.

Fig. 4.—Five other teeth, a canine (which belonged to the bone shown in fig. 3) (*d*); a first bicuspid (*e*); and three molars (*a*, *b*, and *c*). All, save the canine, probably belonged to the other side of this jaw.

Fig. 5.—First metacarpal bone of left hand; lateral aspect. The distal extremity is toward the centre of the plate. In the specimen, the longitudinal axis measures 4.4 cms.

Fig. 6.—Vertebral extremity of the second rib of the right side, with a small part of the shaft. Head fractured off.

Fig. 7.—Portion of jaw; ramus of left side, with condyle and coronoid process perfect. Inner aspect, showing process overhanging inferior dental foramen.

Fig. 8.—Clavicle of left side, anterior aspect; sternal and acromial extremities broken off. The characters of this bone indicate that it belonged to a female subject, or at least to a person who was not accustomed to perform severe and continuous labor.

Fig. 9.—First phalangeal joint, minimus digit, left hand, palmar aspect. The distal extremities of all the phalangeal joints shown in the plate are directed upwards, with the exception of the one placed horizontally (fig. 13).

Fig. 10.—First phalanx of annularis digit of left hand, dorsal aspect. The specimen is perfect and 3.7 ems. in length.

Fig. 11.—Fourth metacarpal, left hand, dorsal aspect. Length of specimen, 4.9 ems.

Fig. 12.—First phalanx of second toe of right foot, seen on dorsal surface.

Fig. 13.—First phalanx of minimus digit of left hand, dorsal aspect.

Fig. 14.—Third metatarsal of left foot, dorso-inner-lateral aspect.

Fig. 15.—Second metatarsal of the left foot, internal surface.

Fig. 16.—Second metatarsal of the right foot, internal surface.

PLATE XXI.—Fig. 17.—Shaft of right humerus, posterior surface, extremities imperfect, olecranon depression not perforated. Restored by the author from three fragments in the collection. Extreme length of specimen, 25.6 ems.

Fig. 18.—Proximal moiety of left humerus, posterior surface (probably from the skeleton of the same individual).

Fig. 19.—Part of the shaft of the left tibia, anterior surface. Proximal moiety with extremity missing.

Fig. 20.—Part of the shaft of the right tibia, anterior surface. Proximal moiety with extremity missing (probably from the skeleton of the same individual). The peculiar excoriation of the bone in the case of these two tibiæ indicate possible disease (syphilis?).

Fig. 21.—Proximal end of left radius, including head.

Fig. 22.—Proximal end of right radius, including head. Reduced about one-third.